## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization International Bureau



## - I CHAIN BUILDON NE CONTRA DAN BOUND BUILD BUILD BUILD NA CONTRA BUILD BUILD

(43) International Publication Date 14 October 2004 (14.10.2004)

**PCT** 

(10) International Publication Number WO 2004/088015 A1

(51) International Patent Classification7:

\_\_\_

D02G 3/38

(21) International Application Number:

PCT/GB2004/001320

(22) International Filing Date: 26 March 2004 (26.03.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

0307330.1

29 March 2003 (29.03.2003) GE

- (71) Applicant (for all designated States except US): DOW CORNING LIMITED [GB/GB]; Cardiff Road, Barry, Vale of Glamorgan CF63 2YL (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): HOOK, Patrick, Barry [GB/GB]; The Mill House, 23 Fore Street, Witheridge, Devon EX16 8AH (GB). EVANS, Kenneth, E. [GB/GB]; School of Engineering, Computer Science and Mathematics, University of Exeter, North Park Road, Exeter EX4 8QF (GB). HANNINGTON, Jonathan, Paul [GB/GB]; 5 Heol Faenor, Beddau, Rhondda Cynon Taff CF38 2JN (GB). HARTMANN-THOMPSON, Claire [GB/US]; 606 East Ashman Street, Midland, MI 48642 (US). BUNCE, Timothy, Rex [GB/GB]; 6 Raglande Court, Llantwit Major, Vale of Glamorgan CF61 1TB (GB).

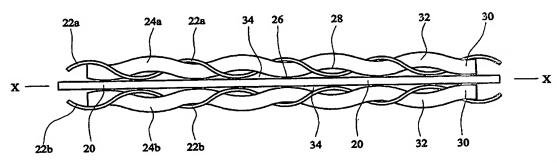
- (74) Agent: PAWLYN, Neil, Anthony; Urquhart-Dykes & Lord LLP, Tower North Central, Merrion Way, Leeds LS2 8PA (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- with amended claims

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: IMPROVEMENTS IN AND RELATING TO COMPOSITE MATERIALS AND STRUCTURES



(57) Abstract: The invention provides composite components, structures and methods for producing composite components, a composite component having a negative effective Poissons ratio, the composite component including a first component and a second component, the first component and the second component extending longitudinally relative to an axis, the first component being provided around the second component through one or more turns, the one or more turns being spaced longitudinally relative to the axis, variation in the tensile load on a first component causing the radial position of the second component relative to the axis to vary.